



# Charles University

FACULTY OF SOCIAL SCIENCES

International Economic and Political Studies

Institute of IPS

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Master thesis

Analysis of Changes in Comparative Advantages of the  
Manufacturing in Vietnam and Comparison with China

## Declaration

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In Prague on December 12<sup>th</sup>, 2021

Yijia Wang

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# List of Abbreviations

ASEAN	Association of Southeast Asian Nations
CNKI	China National Knowledge Infrastructure
CPTTP	Comprehensive and Progressive Agreement for Trans-Pacific Partnership
FDI	Foreign Direct Investment
FTA	Free Trade Agreement
GDP	Gross National Product
GSO	General Statistics Office
JETRO	Japan External Trade Organization
IMF	International Monetary Fund
MNCs	Multinational Corporations
ODM	Original Entrusted Manufacture
RCA	Relative Comparative Advantage
SOE	State-owned Enterprise
TPP	Transatlantic Trade and Investment Partnership
VAT	Value Added Tax
VSIP	Vietnam Singapore Industrial Park
WTO	World Trade Organization

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# Abstract

With the process of Vietnam's reform and opening up, Vietnam's economy has made remarkable achievements. Vietnam's manufacturing industry, taking advantage of the new liberal policies, has also achieved rapid development. Sufficient and cheap labor force, advantageous geographical location, preferential foreign investment policies, and friendly international trade environment with the technological upgrading of manufacturing industry are all the advantages of Vietnam in attracting manufacturing industry. However, there are structural difficulties in the Vietnam's economy. Vietnam's economy is highly dependent on foreign trade and foreign investment, and its trade commodities are mainly assembly and processing with low added value. Compared with China, Vietnam also has obvious disadvantages in the scale of domestic market and supply chain. To some extent, Vietnam's manufacturing industry is integrated into China's supply chain network.

**Keywords:** manufacturing, foreign trade, Vietnam's economy, comparative advantage, supply chain

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# Chapter 1 Introduction

Since mid-2018, the trade friction between China and the United States has been escalating, involving product prices of hundreds of billions of dollars. In order to avoid the risk of China US trade friction, many enterprises began to transfer manufacturing industry from China to Vietnam, and more people exclaimed that China might gradually lose its status as a world factory. If the US punitive tariffs only restrict China and do not affect the cross-border supply chain, Vietnam's exports will be more competitive, especially in labor-intensive consumer industries, such as clothing, shoes and electronic products. Vietnam's export-oriented economic growth depends on attracting a lot of foreign investment. In 2017, the United States and China together accounted for about 35% of Vietnam's export share, driving Vietnam's transformation from an inactive rice and coffee supplier to a manufacturing center.

According to the report of New World Wealth, a wealth research institution, the growth rate of private wealth in Vietnam was 210% from 2007 to 2017, which was the highest in this decade, followed by China with a growth rate of 198%, ranking second in the world. According to the new world wealth analysis, Vietnam's high private wealth growth rate is due to the fact that "made in Vietnam" is replacing "made in China" to a certain extent, and Vietnam has begun to become an emerging global manufacturing center. With its important geographical location, rapid economic development, low labor cost, flexible manufacturing capacity and expanding market, Vietnam has become the latest manufacturing base for many brands. More and more large global manufacturing enterprises have transferred their production centers to Vietnam, where the cost is lower. Many Chinese manufacturing enterprises have also built factories in Vietnam and other places.

Vietnam has achieved remarkable development results in the past 30 years. Under the framework of "socialist oriented market economy" proposed in 1986, the Vietnamese government has been able to implement a series of economic and political reform measures. As a result, Vietnam has experienced rapid economic growth and has stepped from one of the world's least developed countries to a low-income country.

Combined with qualitative and quantitative analysis, this paper analyzes the advantages and disadvantages of Vietnam's manufacturing industry from the perspectives of economic scale, trade level, foreign investment, policy environment, history and culture. At the end of the paper, the question of whether made in Vietnam will replace made in China will be answered.

## Chapter 2 Literature Review

### 2.1 Introduction

This chapter reviews the key literature concerned with the development of Vietnam manufacturing and its links with China. I searched the literature on online library of Charles University, Google scholar and CNKI (for Chinese literature) with key words such as Vietnam manufacturing, China manufacturing, manufacturing transfer, Vietnam economy and Vietnam and China. Many scholars have studied the development of Vietnam's manufacturing industry and foreign investment environment in detail, but few of them are related to the natural law of industrial transfer and China, and most of the previous studies are limited to the objective analysis of economic aspects, lacking the subjective role of history and culture on human being. Interestingly, even though there are a few researches comparing Vietnamese and Chinese manufacturing industries, Vietnamese scholars account for far more than Chinese scholars.

This chapter begins with the historical literature overview about international industrial transfer, international trade and comparative advantage theories. This is followed by contemporary studies concerned with Vietnam's economy and trade. Finally, this chapter analyzes the subtle relationship between China and Vietnam from trade, political and cultural aspects.

## 2.2 Theoretical Overview

Since the 1930s, many scholars have begun to study international industrial transfer activities. Scholars' researches on international industrial transfer mostly focus on a certain phenomenon or problem in a certain period, and put forward a theory to analyze practical problems from the perspective of theoretical research, and promote these theories to apply to similar phenomena or problem analysis.

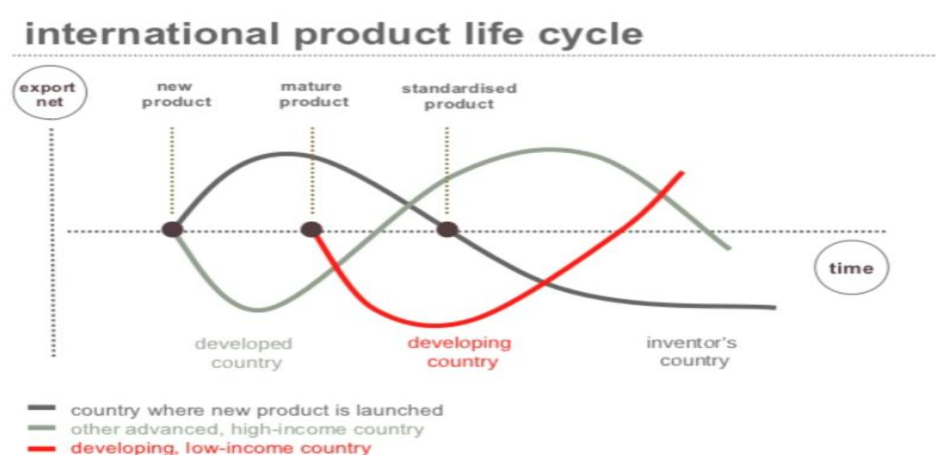
In 1932, the Japanese economist Akamatsu (1932) proposed the theory of "Flying Geese Model" for the first time when he studied the industrial development mode of Japan in that period. In his article *Comprehensive Principles of Japan's Economic Development*, he pointed out that industrial transfer (sometimes also called "industrial spillover") plays an important role in the process of industrial upgrading in developing countries. Cumings (1984) studied the industrial division and industrial transfer between East Asian countries (regions) from 1960s-1980s, analyzed the dynamic relationship between them, and gave a reasonable explanation with the "Flying Geese Model". Ozawa (2000) used a lot of empirical research to draw the conclusion that the development of most industries in Japan is in line with the "Flying Geese Model".

Vernon (1966) put forward the "product life cycle theory" under the premise that the production factors of different countries are very different. He explained the phenomenon of international industrial transfer from the

perspective of product life cycle change. After that, the theory of "transition" is based on the theory of "product cycle", which is often used to explain the problem of international industrial transfer and the foreign investment behavior of multinational companies. He divides the life cycle of a product into three categories: "new product, maturing product and standardized product". Products at different life cycle stages have different production locations. For new product, products are mainly produced domestically. On the one hand, in order to be close to the main market and satisfy local consumers. On the other hand, producer can also collect customer feedback in time for product adjustments. Products at this stage have monopolistic characteristics. For maturing product, the production technology of the product is becoming increasingly perfect, and more and more companies will produce similar products, the monopoly advantage of the company will be reduced, and the price competition of the products will increase. In order to reduce the production cost, the company will begin to invest in foreign factories. Since the production technology of products has been standardized, the technological monopoly of enterprises has disappeared, the market tends to be more open to competition, the price of products is greatly reduced, and cost competition has become the mainstream in the majority of traditional industries. Therefore, companies must continuously reduce production costs if they want to survive. The advantages of labor cost are becoming more and more obvious, and some production enterprises in developed countries have begun to transfer to developing countries. Developed countries can invest and build factories in developing countries not only to reduce production costs, but also to be closer to the consumer market. Based on product life cycle (Figure 1), production will gradually move from inventor's country to other developed and developing countries (export turns to import) when the product are adopted worldwide. Now, the product is not single commodity, but aggregated manufacturing products. As figure shows below, the export of China (inventor's country curve) goes down, and the export of Vietnam

(developed country curve) goes up, leading to the intersection. In the meanwhile, countries like Cambodia (developing country curve), although start late, they also accept industrial transfer from China and increase their exports. Regional economists have applied "gradient transfer theory" to the study of regional economics, and then developed it into "gradient transfer theory of regional economic development".

Figure 1: International product life cycle



Source: Vernon, 1966

[https://www.researchgate.net/figure/International-Product-Life-Cycle-Source-Vernon-1966\\_fig3\\_304969920](https://www.researchgate.net/figure/International-Product-Life-Cycle-Source-Vernon-1966_fig3_304969920)

According to Gereffi (1994), "value chain describes a series of processes from concept to final use of a product, including R & D, design, manufacturing, marketing, after-sales and other links." It can be said that the essence of global value chain is the "division of labor" of economic activities, which includes the main links of R & D, manufacturing and sales, as well as a series of supporting processes such as investment, service and after-sales. With the division of labor in economic activities, it is the difference of value-added created by various sectors of the economy. After investigating the different location distribution of multinational corporations to their subsidiaries, Kogut (1985) proposed that the value added chain should be regarded as the core

position in the formulation of international business strategy. On the basis of added value, the comparative advantage of the country and the competitive advantage of the company are mutually integrated, which is helpful to determine the price. On this basis, producers will have the ability to decompose the production process into different regions according to the added value of different links in the value chain, and finally form a "global production network" based on the value-added differences among countries. As for the distribution pattern of value-added as a unit, Shih (1996) put forward the famous "smile curve" after studying the computer industry in Taiwan: countries integrate into the global value chain by virtue of their differentiated comparative advantages, while developed countries tend to engage in high-end and intangible high-value-added activities, such as before manufacturing. On the contrary, developing countries are mainly engaged in low-end and tangible production activities, such as processing, assembly and other low-value-added activities.

According to the traditional trade theory, the formation of international trade pattern depends on the basic economic characteristics such as resource endowment, technological level and even demand preference of each country. But the practice shows that the trade between developed industrialized countries, especially the trade of capital and technology intensive products, is not based on the differences of these basic economic characteristics. From the development of contemporary international trade, economies of scale, imperfect competition and product differences have become the leading factors in the development of contemporary international trade. Especially in intra-regional and intra-industry trade, it is an indisputable fact that the role of scale economy even exceeds the conventional comparative advantage. The factor of scale economy is abstracted as the decisive factor of international trade, which has high theoretical value. It marks the transformation of traditional international trade theory to contemporary new trade theory

(Inomata, 2017) .

Once a country starts to carry out large-scale production in an industry with the goal of obtaining economies of scale, even if the scale advantage is very weak at the beginning, this advantage will snowball with the expansion of production, and finally achieve specialized production and mutual trade. A lot of trade (especially the trade between countries with similar resources and Technology) is the result of specialized division of labor based on scale economy, rather than the result of specialized division of labor based on comparative interests.

Investment and trade substitution theory was put forward by Canadian economist Mundell (1957). In his study Mundell systematically analyzed the relationship between trade and investment in the international operation of multinational companies, and put forward the theory of investment and trade institution. According to the theory, the cause of international direct investment is international trade. The reason why there is no international direct investment under the condition of free trade is that there is no precondition for international direct investment and there is no condition for its profit. In the implementation of international direct investment, enterprises will also encounter various investment barriers, which impose a high cost mode on the international economic competition.

Kojima Kiyoshi (1996) analyzed the political and economic situation in Japan at that time. Based on the theory of comparative advantage, he studied the theory of international direct investment, developed it and put forward the theory of marginal industrial expansion. The theory holds that: when a country makes foreign investment, it should first transfer the marginal industries, that is, those industries which have lost or will lose comparative advantages in their own country, to those countries which still have comparative advantages or the potential for gaining comparative advantages. This is a choice to

maximize benefits, both for the host country and for the investor country. In addition, some Japanese scholars also deeply analyzed the theory of marginal industry expansion. Ushimaru Hajime (1999) gave a more in-depth explanation of "Geese Model Theory" and "product life cycle theory" of Akamatsu. He used the H-O-S model to study and draw the conclusion that the transfer of comparative advantage and the transfer of related industries brought about by the transfer of comparative advantage are the essence reflected by "Flying Geese model theory" and "product life cycle theory".

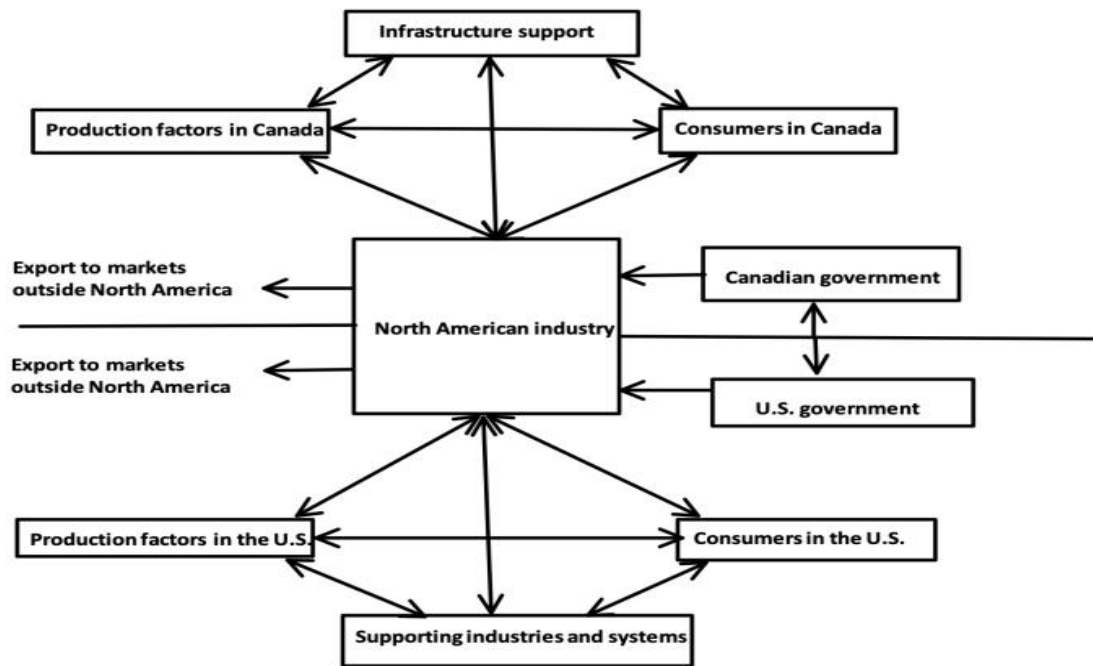
Lewis (1978) studied the international transfer of labor-intensive industries in the 1960s. He put forward the theory of labor-intensive industry transfer in his book *The Evolution of International Economic Order*.

Porter (1990) recognized as a master of the research on industrial competitiveness. He defined the international competitiveness of industry as "the international competitiveness of a country in a certain industry, whether a country can create a good business environment and enable its enterprises to obtain competitive advantages". Porter's definition is to combine the analysis of enterprises, industries and countries as a complete analysis basis for the comprehensive analysis of the international competitiveness of industries. In recognition of the comparative advantages among industries of different countries and the decisive influence of these comparative advantages on international industries, the study of international competitiveness of industries focuses on the analysis of the international competitiveness of specific industries in various countries. Porter believes that demand, business strategy, structure and competition mode, production factors, relevant and auxiliary industries and government behavior are the main factors that determine whether a country's specific industry has international competitiveness. He put forward the "Diamond Model" theory in his famous book on national competitive advantage, which is the most influential theory of industrial international competitiveness at present. Its main content is: the



international competitive advantage of a country's specific industry depends on four endogenous factors: production factors, demand conditions and relevant support. In addition, as exogenous factors, opportunities and government also have an impact on industrial competitive advantage. Following the diamond model, Porter (1990) put forward the theory of "four stages of industrial international competition", which divides the international industrial competition into four progressive stages: factor driven, investment driven, innovation driven and wealth driven. The first three stages will continue to rise, and the last stage belongs to the decline period. Dunning (1993), a British scholar, introduced multinational corporations (MNCs) into Porter diamond model as a new exogenous variable, which is the famous "international diamond model". MNCs can influence the international competitiveness of host countries through competition effect, trade effect and resource transfer effect. Krugman and Cruz (1993) found that the free trade agreement between Canada and the United States makes the influence of the national boundary on the development strategy and industrial policy of Canadian industry. Because of the increasingly fierce competition in innovation and cost, in order to compete with the advanced industries of the United States and survive and develop, Canadian industry operators need to integrate the Canadian diamond model with the United States. This is the so-called "double diamond model" as is illustrated below.

Figure 2: Double diamond model in Canadian industry



Source: Krugman and Cruz, 1993

<https://link.springer.com/article/10.1007%2Fs11747-011-0270-5>

Dong sung CHO, a Korean scholar (1994) based on the reality of South Korea, this paper puts forward a "nine factor model" to evaluate the international competitiveness of industries in developing countries more accurately. The determinants of industrial international competitiveness are divided into three categories, including nine elements: four physical determinants: business environment, resource endowment, domestic demand and related supporting industries; and four human determinants: workers, entrepreneurs, politicians, professional managers and engineers; the ninth determinant is external opportunities.

As for the research on the impact on the industrial competitiveness of host countries, according to Muchielli and Chedor (1999), international market experience and knowledge, better international sales network, and more advanced technology and management experience are brought to domestic manufacturers by foreign capital investing in developing countries, which are also temporarily unavailable to domestic manufacturers. Therefore, FDI can

greatly improve the competitiveness of domestic export trade by technological and managerial spillovers brought by the incoming foreign investment. Grossman and Helpman (1997) proved that foreign investment can promote the technological progress and knowledge accumulation of host countries through the technology spillover effect, which makes the long-term economic growth possible. According to Findlay (1978), foreign direct investment (FDI) can bring about economic growth of host countries. The factor is technological progress, which decreases with the accumulation of capital and the decline of marginal output. Because of the existence of spillover effect, the decline of marginal output of capital is prevented. In essence, spillover effect prevents diminishing returns and maintains long-term economic growth.

RCA, revealed comparative advantage, is a method first proposed by Balassa (1965) to measure the comparative advantage of international trade. RCA index can eliminate the influence of the fluctuation of national aggregate and world aggregate, and can better reverse the relative advantage of a country's export of a certain industry compared with the world's average export level. If  $i$  is the industry,  $j$  is the country and region,  $X_{ij}$  is the export value of the country  $j$ 's export product  $i$ , then the RCA of the country's industry can be expressed as follows:

$$RCA_{ij} = \frac{X_{ij} / \sum_j X_{ij}}{\sum_i X_{ij} / \sum_i \sum_j X_{ij}}$$

Generally speaking, if the RCA index of a country is greater than 2.5, it indicates that the industry has strong international competitiveness; RCA is between 2.5-1.25, which has strong international competitiveness; RCA is between 1.25-0.8, with strong international competitiveness; when RCA is less than 0.8, international competitiveness is weak.

Intra industry trade refers to that a country imports some similar products

while exporting. This theory studies international trade from the perspectives of demand, product difference and economies of scale. It is a supplement and development of comparative advantage theory. The most authoritative measure of intra industry trade level is the Lloyd Grubel index (GL). The formula is as follows:

$$GL = 1 - \frac{|X_i - M_i|}{X_i + M_i}$$

Among them,  $X_i$  and  $M_i$  represent the export volume and import volume of  $i$  industry or  $i$  product respectively. When a country only imports or exports (there is no intra industry trade),  $GL = 0$ ; when the import of a certain kind of products equals to export (i.e. intra industry trade reaches the maximum),  $GL = 1$ . Generally,  $GL$  fluctuates between 0 and 1. To some extent, intra industry trade is the symbol of industrialization level and economic growth of developing countries.

## 2.3 More Contemporary Reviews related to Vietnam Economy

Scholars' research on different countries shows that Thailand's manufacturing development depends mainly a knowledge-intensive governance model. Therefore, The market environment of the host country where foreign capital is located has a great impact on the improvement of Thailand's manufacturing status (Said-Allsopp and Tallontire, 2015).

With a series of reforms, including labor market reform, privatization and rationalization of state-owned enterprises (SOEs), as well as various legal, regulatory and institutional reforms, Vietnam began to transform from a centrally planned economy to a market economy (Van Arkadie & Mallon, 2003). The Vietnamese government has been trying to attract foreign direct investment through a series of laws and policies (Javorcik, 2004; Dunning and

Lundan, 2008; Garcia et al., 2013). Because FDI has been regarded as the main means of transferring technology and management knowledge to enterprises in developing countries for a long time (Dunning, 1993; Lall et al., 2003), which can also help promote the productivity of local enterprises.

## 2.4 Contemporary reviews related to China Vietnam relation

Vu (2010) put forward the issue of trade relations between China and Vietnam. In the theory of international trade and economic growth, she carefully analyzed the current situation and existing problems of trade between China and Vietnam. This paper mainly analyzes the great achievements Vietnam has made since the reform and opening up. She pointed out that the main problems in the process of Vietnam's economic development are: unbalanced development (the industry is concentrated in the southern big cities, focusing around agriculture and light industry) , a large gap between the rich and the poor, low prices of export products, and the widening deficit of foreign trade year by year. It is necessary to further strengthen trade exchanges and cooperation in more fields between the two studied countries, so as to promote the development of foreign trade on the border of both sides.

Ravindran (2012) analyzed the South China Sea dispute between China and Vietnam from the perspective of politics and economy. China and Vietnam have a long history of cooperation and conflict. In recent years, the two countries fought a war in 1979, and had skirmishes in the South China Sea in 1974 and 1988. The normalization of bilateral relations in 1991 was mainly due to sharing a communist ideology by both sides. However, even so, distrust has always existed, and Vietnam has always had a nationalistic narrative antagonistic toward China. Since the normalization of diplomatic

relations, the bilateral economic relations between China and Vietnam have developed rapidly, and China has become Vietnam's largest trading partner since 2004. Under this premise, China has facilitated the use of overt and covert economic sanction or economic coercion to pressure Vietnam on the South China Sea issue.

Fry and Mees (2016) used a comparative historical approach to analyze the industrial relations between China and Vietnam. Similar social and cultural norms and Confucian paternalistic style have a great impact on the handling of labor relations between the two countries. However, compared with China, Vietnam has developed a more detailed and practicable labor law, a stronger tripartite institutional framework and an industrial system that is more independent of political parties. This is also one of the important reasons why Vietnam successfully attracts investment and develops economy.

Ma and Liu (2017) quantitatively analyzed the trade relations between China and Vietnam under the geo-economy. They believe that Vietnam has a high degree of trade dependence on China, and there is a competitive relationship in labor-intensive industries. With the increase of China's labor cost, Vietnam has obvious comparative advantage in labor cost. Industrial diverge has taken place in the low-skilled manufacturing industry such as textile, apparel and footwear, which develop rapidly in Vietnam in recent years. Vietnam's advantages lie in: firstly, it has abundant labor and natural resources; secondly, Vietnam is good at making use of rules of (WTO) trade agreements and obtaining benefits from it; thirdly, Vietnam's strategic position is promoted. In order to weaken the influence of China's economy, the US government established a US centered and China free Trans Pacific Partnership (TPP). As a member of the TPP, the trade between the United States and Vietnam also increased eight-fold between 2002 and 2012. The United States is more inclined to choose Vietnam than China for the same commodities. Under the security umbrella from the US, Vietnam can continue

free trade with China and maximize its interests.

By analyzing the trade relations between China and Vietnam from 2000 to 2015, Binh (2017) believes that China is the most important strategic trade partner of Vietnam. Even in the context of relatively slower growth of China's economy, trade relations between China and Vietnam are accelerating. However, he believes that this integrated trade relationship is advantageous for China but disadvantageous for Vietnam. In this kind of trade relations, Vietnam faces a huge trade deficit. Originally, Vietnam's trade deficit could be compensated by exporting to other countries in the world, but with the shrinking markets of other countries, this problem has become more prominent.

Li (2019) systematically analyzed Vietnam's FTA strategy and studied Vietnam's manufacturing and political situation. He concluded: "The labor advantage and political stability provide Vietnam with the internal driving force for economic development. The free trade network with a wider coverage creates a broad radiation space for the Vietnamese economy on the outside. The internal and external conditions complement each other, and together they have achieved the status of the 'economic miracle' and the 'new Asian tiger' that Vietnam may further develop in the past and in the future. This is also what Vietnam believes to achieve. Vietnam plays both ends against the middle in the trade friction between China and the United States."

From the political level, Hoang (2019) believes that the relationship between China and Vietnam is asymmetric, which is reflected in the geographical, historical, economic, political and other aspects. In order to manage this asymmetric relations, Vietnam has been pursuing a foreign policy of strategic balance, international integration and "cooperation and struggle". This "struggle" is particularly obvious on the South China Sea issue. In recent years, China's strengthening of sovereignty over the South China Sea has

reaffirmed Vietnam's permanent perception which regards China as an expansionist northern neighbor. Large scale protests broke out in 2011 in Vietnam for the South China Sea disputes. However, he believes that Vietnam will maintain its national interests in the South China Sea while keep amicable relations with Beijing.

In addition, the influence of cultural factors on Sino Vietnamese economic and trade relations cannot be ignored. Due to the relationship between history and geographical location, Chinese Confucianism, Taoism and Buddhism were introduced into Vietnam through China, and had a wide influence on Vietnamese religious beliefs and social customs. Some customs, such as burning of votive papers, are unaware by most Vietnamese that they originated in China (Napier and Vuong, 2013; Vuong et al., 2018). In 2019, Vietnamese Citizens of Chinese origin, Hoa people, account for 0.78% (about 0.75 million) of the Vietnamese population. They have also developed Chinese family business networks in Vietnam (Kim & Kim, 2018; Tran, 1993).

## Chapter 3 Empirical analysis

### 3.1 Introduction

Vietnam's import and export trade of goods has increased year by year since the "reform and opening up". According to the statistics of the United Nations Conference on Trade and development database, from 1999 to 2019, Vietnam's total import and export of goods increased from US \$23.2 billion to US \$518 billion, with an increase rate of more than 20 times. In 2019, Vietnam's imports and exports amounted to US \$253.9 billion and US \$264.2 billion respectively, realizing a slight trade surplus. At the same time, according to the world bank database statistics, in 2019, Vietnam's imports of goods and services accounted for 103.60% of GDP, and exports accounted



for 106.79% of GDP, while the world average of these two indicators were 29.75% and 30.51% respectively. These statistics all reflect the integration of Vietnam's economy with the world economy under the "export-oriented" strategy, as well as the pulling effect of import and export trade on Vietnam's GDP.

This chapter will be divided into two parts, combined with a large number of data, to analyze the characteristics of Vietnam's economy from the perspective of production and trade, as well as the comparative advantage compared with China.

## 3.2 Trade Structure

Behind the rapid growth of Vietnam's foreign trade is the change of Vietnam's trade structure, which is mainly manifested in the transition of foreign trade products from primary products to manufactured products. The participation of manufactured products in international trade is the symbol of Vietnam's manufacturing industry embedded in the global value chain.

### 3.2.1 Overview

According to Japan's classification criteria refer to JETRO's delineation criteria (Deb and Hauk, 2017), Vietnam has the strongest comparative advantage in the shoe making industry. Although the comparative advantage has declined in recent years, it still remains at about 10. Moreover, the clothing and textile industry also has an extreme strong advantage. The comparative advantage of chemical and mining, intermediate products and transportation is weak. From a dynamic point of view, the comparative advantage of capital products and electrical products increased significantly, while the comparative advantage of raw material related products showed a downward trend. To a certain extent, Vietnam's foreign trade is not limited to

the export of low value-added raw materials and primary processing. With the increase of added value of products, Vietnam's manufacturing industry is also upgrading, to some extent. (see Table 1)

Table 1: RCA Index of Vietnamese products from 2003 to 2017

Type of Product	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Capital goods	0.19	0.21	0.23	0.27	0.31	0.36	0.41	0.53	0.69	1.09	1.23	1.19	1.24	1.23	1.37
Consumer goods	1.75	1.76	1.67	1.64	1.64	1.61	1.69	1.71	1.53	1.28	1.26	1.31	1.22	1.21	1.12
Intermediate goods	0.26	0.25	0.26	0.33	0.35	0.41	0.4	0.49	0.53	0.49	0.46	0.47	0.42	0.4	0.41
Raw materials	2.78	2.7	2.54	2.42	2.27	1.9	1.78	1.41	1.33	1.11	0.94	0.89	0.77	0.69	0.57
Animal	3.75	3.56	3.35	3.63	3.42	3.24	2.81	2.8	2.57	1.97	1.7	1.69	1.28	1.12	1.01
Chemicals	0.1	0.1	0.12	0.13	0.14	0.19	0.14	0.17	0.2	0.17	0.15	0.17	0.15	0.13	0.12
Food Products	0.84	0.83	0.79	0.8	0.75	0.73	0.66	0.76	0.74	0.64	0.64	0.69	0.57	0.57	0.56
Footwear	18.78	20	18.56	18.27	17.6	17.72	15.04	14.9	13.88	11.87	11.6	11.81	10.18	9.81	9.62
Fuels	1.9	1.91	1.72	1.51	1.35	1.1	0.95	0.63	0.58	0.47	0.34	0.31	0.2	0.16	0.12
Hides and Skins	2.8	2.83	2.82	2.69	3.03	3.46	3.04	3.23	3.26	2.87	3.09	3.3	3.15	3.17	2.98
Mach and Elec	0.27	0.29	0.31	0.36	0.4	0.47	0.52	0.65	0.86	1.37	1.54	1.48	1.54	1.54	1.67
Metals	0.21	0.21	0.22	0.26	0.31	0.39	0.31	0.44	0.49	0.46	0.44	0.45	0.39	0.43	0.44
Minerals	0.47	0.66	0.56	0.5	0.55	0.62	0.9	0.55	0.64	0.72	0.8	0.54	0.55	0.32	0.29
Miscellaneous	0.61	0.74	0.83	0.83	0.94	0.95	0.89	0.94	0.89	0.74	0.71	0.79	1.09	1.26	1.38
Plastic or Rubber	0.63	0.59	0.6	0.81	0.8	0.75	0.7	0.91	0.92	0.89	0.77	0.68	0.59	0.56	0.61
Stone and Glass	0.59	0.6	0.55	0.6	0.64	0.62	1.36	1.33	0.54	0.3	0.31	0.29	0.24	0.23	0.21
Textiles and Clothing	3.67	3.57	3.41	3.82	4.27	4.45	4.44	4.66	4.71	4.1	4.24	4.25	3.66	3.49	3.4
Transportation	0.1	0.12	0.11	0.1	0.11	0.12	0.14	0.17	0.15	0.12	0.13	0.14	0.12	0.12	0.12
Vegetable	2.81	3.06	3.79	3.7	3.5	3.18	3.07	2.99	2.86	2.58	1.99	1.88	1.55	1.44	1.23
Wood	0.46	0.48	0.54	0.59	0.72	0.69	0.64	0.8	0.98	0.87	0.94	0.91	0.72	0.65	0.63

Source: UNCTADSTAT (2017)

<https://unctadstat.unctad.org/wds/TableViewer/tableView.aspx>

Vietnam's economic growth rate in 2018 is 7.08%, faster than China's 6.6%. If you just look at the growth rate comparison, you may think that Vietnam will pose a challenge to China; But once the economic scale is taken into account, you will find that the growth rate can explain very little. In 2018, China's GDP was US \$13.6 trillion, while Vietnam's was US \$242.55 billion, which is about half of Shanghai's. If you rank Vietnam's GDP in 2018 together with the GDP of Chinese cities, Vietnam can rank eighth, between Suzhou and Chengdu. Another special structural risk in Vietnam's economy is Samsung. According to the General Statistics Office (GSO) of Vietnam, Samsung in Vietnam accounts for about 30% of the total output value of Samsung group, but in recent years, Samsung's output value accounts for more than 28% of Vietnam's GDP, and its export volume also accounts for nearly 25% of Vietnam's export volume. Samsung's operation structure in Vietnam is "two ends out", which means that the production of upstream product accessories and market are not in Vietnam. Vietnam is an assembly re-export economy with limited added value. The supply of parts and semi-finished products mainly comes from overseas, and the main sales market of manufactured products is also overseas. Apart from employment, Samsung has relatively limited economic ties with Vietnam. Further data show that "two ends out" is not the characteristic of Samsung, but the structural characteristic of Vietnam's economy. Table 2 is the data of Vietnam's import and export trade from 2014 to 2018. It can be seen from the data that Vietnam's import and export growth is fast. Vietnam's dependence on foreign trade (total import and export / GDP) was originally very high, and now it has risen to nearly 200% year by year, But Vietnam's surplus ratio (surplus / total import and export) is very low, always hovering around 1%, that is to say, the added value completed in the process of import and export is very limited.

Table 2: Import and export data of Vietnam from 2014-2018

(billion US dollars)

Year	GDP	Import and export Value	Dependence on foreign trade	Export Value	Import Value	Trade Surplus	Surplus rate
2014	186.21	298.07	160.1%	150.22	147.85	2.37	0.79%
2015	193.24	327.79	169.6%	162.02	165.78	-3.76	-1.15%
2016	205.28	351.56	171.3%	176.58	174.98	1.60	0.46%
2017	223.78	428.33	191.4%	215.12	213.22	2.90	0.68%
2018	242.55	480.88	198.3%	243.70	237.18	6.52	1.36%

Source: Vietnam General Bureau of statistics (2018)

<https://www.gso.gov.vn>

Vietnam mainly imports machinery and equipment and intermediate products (parts, semi-finished products, etc.), while a large proportion of its exports are end products. According to the report of the Vietnam General Bureau of statistics, in 2018, Vietnam's imports mainly included three categories: capital goods dominated by machinery and equipment (accounting for 30%), intermediate products (accounting for 60%) and consumer goods (accounting for 10%). China is the largest import source of Vietnam, followed by South Korea, and ASEAN countries rank third. Among Vietnam's exports in 2018, the most important are mobile phones, textiles, electronic products, shoes and other products for end-users. More than 80% of the exports are done by foreign-invested enterprises, and the local enterprises in Vietnam only dominate the export of aquatic products and wood products. The largest export market is the United States, followed by the European Union, and China ranks third. Based on Vietnam's super high degree of dependence on foreign trade, extremely low surplus ratio and the above trade structure, we can roughly see that Vietnam is doing more simple processing of imported intermediate products and then exporting them, and the added value that can be achieved in this process is relatively limited. In this sense, we can even understand Vietnam's large-scale import and export as a kind of reexport trade in a special sense. The manufacturing enterprises in East Asian

countries put the last link in the production process in Vietnam, not for the purpose of forming enough value-added in the local area, but for two purposes: first, to use Vietnam's relatively cheap labor force to complete the production link with relatively high labor force; second, to use Vietnam's superior foreign trade environment to complete its export purpose. Table 3 shows the trade data of Vietnam and its main trading partners from 2017 to 2018. China trade surplus in Chinese mainland, South Korea, ASEAN and China Taiwan region. The imports from these places exceed the total 2/3 of Vietnam, and the trade surplus of the United States and the European Union is much larger. The structure of this trade object further validates the preceding inference.

Table 3: Trade between Vietnam and its main trading partners from 2017 to 2018

In billion dollars

Trade Partner	2017				2018			
	Total X+M	Import	Export	Trade balance	Total X+M	Import	Export	Trade balance
China Mainland	93.92	58.53	35.39	-23.14	106.94	65.57	41.37	-24.20
Korea	61.75	46.94	14.81	-32.13	65.87	47.63	18.24	-29.39
The U.S.	50.87	9.34	41.53	32.19	60.28	12.75	47.53	34.78
ASEAN	50.04	28.36	21.68	-6.68	56.69	13.95	41.99	-6.99
EU	50.49	12.20	38.29	26.09	55.94	13.95	41.99	28.04
Japan	33.71	16.92	16.79	-0.13	37.94	19.11	18.83	-0.28
Taiwan	15.28	12.71	2.57	-10.14	16.39	13.24	3.15	-10.09

Source: Vietnam General Bureau of statistics (2018)

<https://www.gso.gov.vn>

Take Samsung as an example, which is mentioned above, on October 2, 2019, Samsung closed its last factory in China and transferred its production base to Vietnam with better terms of foreign trade. Even so, Samsung's mobile

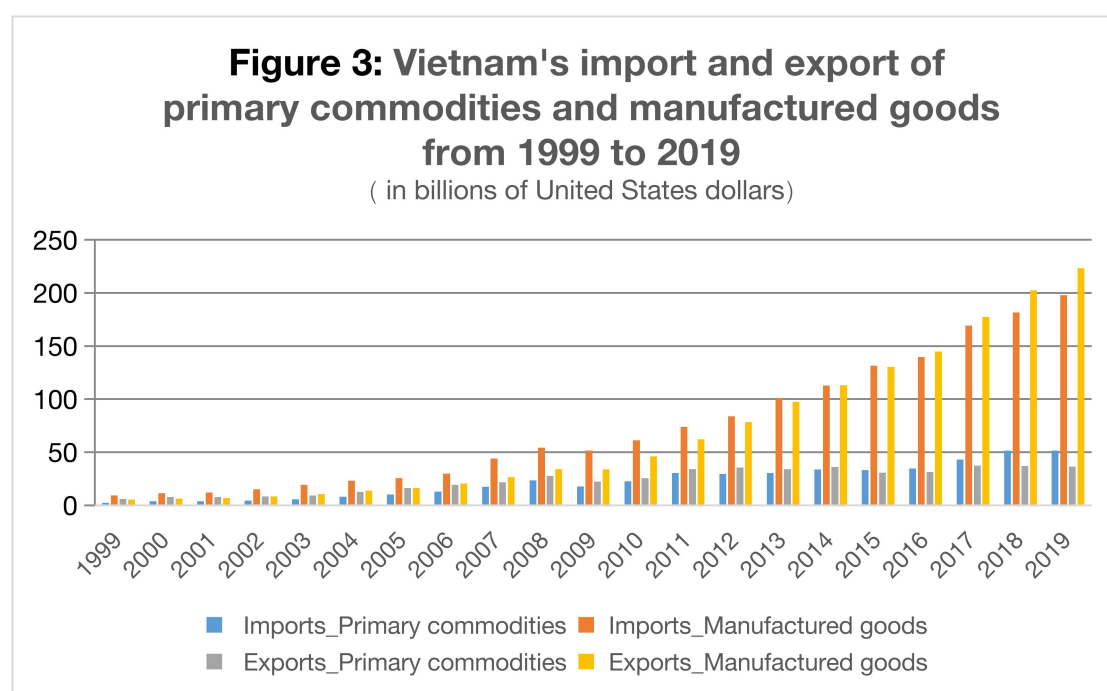
phone factory in Vietnam is still deeply linked to the Chinese supply chain network. About 30% of the products of Pingxiang Friendship customs clearance in China Vietnam border are related to Samsung, and the proportion of goods is larger in terms of cargo value. As Samsung withdraws its manufacturing plants from China, it has made a decision to hand over 20% of its mobile phones to ODM factories by 2020. In 2018, the figure is only 3%. Chinese mainland mobile phone ODM has the overwhelming advantage in the world. Only top three of ODM enterprises in China occupy more than 70% of the global market share. Thus, the trade between China and Vietnam is closely related to industrial transfer.

### 3.2.2 Import Structure

To see more details about trade characteristics of Vietnam, we subdivide the import and export trade of Vietnam's commodities from 1999 to 2019, we can find that during 1999-2007, the amount of primary products and manufactured goods participating in foreign trade is basically the same, primary products have been in a trade surplus for a long time, while manufactured goods have always maintained a trade deficit; since 2007, that is, after Vietnam officially joined WTO, the participation of Vietnamese manufactured goods in international trade has increased. By 2019, the total import and export trade volume of manufactured goods has been four times that of primary products. At the same time, the trade deficit of manufactured goods has gradually turned into surplus after 2016 (Figure 3). Compared with China, the gap between Vietnam's exports of manufactured products and China is narrower. On the one hand, it benefits from the rapid development of Vietnam's manufacturing industry; on the other hand, it is due to the partial transfer of China's manufacturing industry. It is worth noting that although Vietnam's imports and exports of manufactured products have achieved a surplus, both the surplus and the surplus rate are far greater than those of

China, which explains the "two ends out" mode of Vietnam's manufacturing industry mentioned above to a certain extent (Figure 4).

Generally speaking, Vietnam's manufactured goods trade shows a trend of "expanding foreign trade, deficit first and then surplus". On the other hand, from the product classification of Vietnam's import and export trade, according to the United Nations Technical Category of trade in goods (Lall, 2019), "high-tech manufactured goods" dominated by electronic and electrical appliances, "low tech manufactured goods" represented by textiles, and "medium tech manufactured goods" represented by machinery occupied the main position of Vietnam's product import and export. It can be said that at present, Vietnam's import and export trade is mainly concentrated in three types of manufactured goods: electronic and electrical appliances, textiles and machinery (see Table 4).

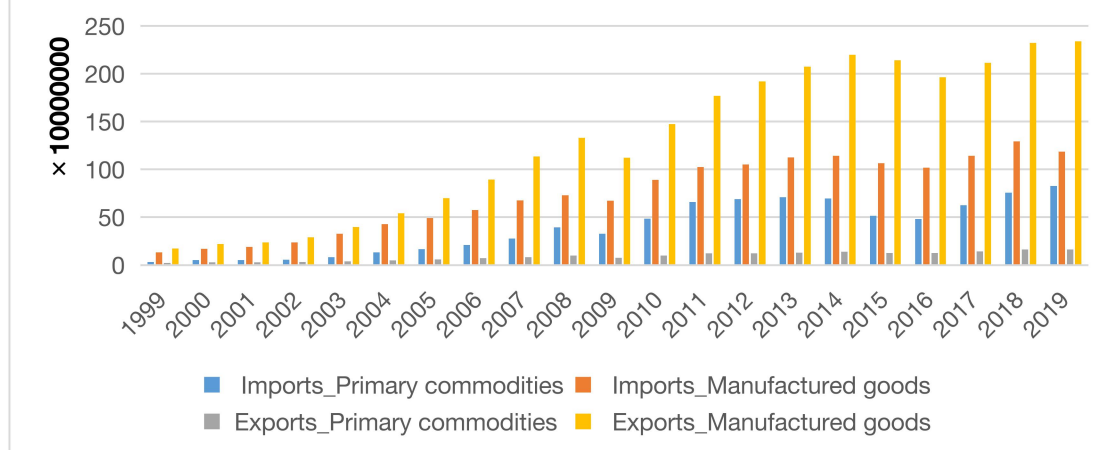


Source: UNCTADSTAT (2019)

<https://unctadstat.unctad.org/wds/TableViewer/tableView.aspx>



**Figure 4: China's import and export of primary commodities and manufactured goods from 1999 to 2019**



Source: UNCTADSTAT (2019)

<https://unctadstat.unctad.org/wds/TableViewer/tableView.aspx>

**Table 4: Import and export structure of Vietnam's goods trade in 2018  
(million US dollars)**

Type	Value	Share	Type	Value	Share
High technology: Electronics	246. 154	100. 0%	High technology: Electronics	246. 547	100. 0%
Medium technology: Machinery	63. 400	25. 7%	Medium technology: Machinery	79. 106	32. 1%
low technology: textile	37. 323	15. 2%	low technology: textile	60. 086	24. 4%
Primary products	31. 322	12. 7%	Primary products	36. 188	14. 7%
Medium technology: processing	27. 840	11. 3%	Medium technology: processing	21. 200	8. 6%
Others	86. 270	35. 1%	Others	49. 967	20. 3%

Source: UNCTADSTAT (2018)

<https://unctadstat.unctad.org/wds/TableViewer/tableView.aspx>

In terms of import, Vietnam mainly imports "intermediate products" such as

electronic and mechanical parts and textile raw materials. The purpose of importing these products is not domestic consumption, but continuous production. Take 2019 as an example, Vietnam's main imported products have the attribute of "Chinese products". Among them, the five products with the highest import amount are mainly "electronic" and "mechanical" parts, which have the dual characteristics of huge amount and high growth rate. This shows that the Chinese products represented by parts are becoming the main body of Vietnam's import products. At the same time, the main exported countries of these five products include the East Asian economies dominated by South Korea, China. To a certain extent, East Asia is the raw material supplier of Vietnam's manufacturing industry. On the other hand, from a global perspective, in 2019, Vietnam's imports accounted for the highest proportion of the world's total imports of similar products in five categories, all of which were "textile" raw materials. Vietnam's imports of these five categories ranked in the top three in the world. In the world, Vietnam was the largest demand country for these five categories of products; and most these textile raw materials were imported from China, China It acts as the largest "supplier" of Vietnam's textile products (see Table 5). On the whole, in 2019, China's products represented by electronic and mechanical parts are the main body of Vietnam's imports, while Vietnam's imports of textile raw materials become an important part of the world's import structure of similar products. At the same time, East Asian economies represented by China are the main raw material suppliers of Vietnam's manufacturing industry.

Table 5: Vietnam's main five imports with the highest proportion in the world's total imports in 2019 (in million US dollars)

HS	Type	Imported Value	Share in Vietnam's imports	Growth in imported value between 2015-2019	Main exporter	Share in Vietnam's imports
85	Electrical	77,772	26.39%	17%	China	33.4%

	machinery...					
84	Machinery, medical...	23,438	9.5%	3%	China	43.3%
39	Plastics and articles thereof	15,872	5.38%	23%	China	26.0%
27	Mineral fuels...	15,561	4.64%	22%	Kuwait	22.8%
72	Iron and steel	11,333	4.42%	8%	China	29.9%
HS	Type	Imported Value	Share in world's imports	Ranking in world imports	Main exporter	Share in Vietnam's imports
60	Knitted or crocheted fabrics	5,446	18.1%	1	China	58.3%
52	Cotton	4,373	9%	3	USA	36.4%
58	Special woven fabrics...	1,080	10%	1	China	56.3%
54	Man-made filaments...	3,398	7.7%	1	China	50.1%
59	Impregnated, coated...	1,465	6.4%	3	China	48.6%

Source: Trade Map (2019)

<https://www.trademap.org/Index.aspx>

### 3.2.3 Export Structure

In terms of exports, Vietnam not only has "intermediate products" represented by electrical and mechanical parts, but also has "final products" represented by textiles such as clothing and shoes with huge amount of money. In 2019, the largest amount of Vietnam's exports was electrical machinery, accounting for more than 40% of Vietnam's total exports. At the same time, electrical products were also the products with the fastest export growth rate in the past five years, with a growth rate of about 20%. Vietnam gradually formed an export pattern dominated by "electrical products". After the electrical products, there are shoes, clothing and other products, both of which are for the purpose of consumption. They are also the main source of Vietnam's relatively high added value and trade surplus in import and export. In addition, shoes, woven goods, clothing, coffee and tea four kinds of

products account for more than 6% of the world's total exports of similar products, ranking second and third in the world's exports. These products are mainly used for consumption and use, and are the main component of Vietnam's "final products" exports (see Table 6). However, compared with the diversification of Vietnam's import sources, the export countries of Vietnam's products are relatively concentrated. The United States has become Vietnam's main export destination and Vietnam's largest "consumer market". Overall, in 2019, Vietnam's exports were mainly electrical products and textile products, with the dual attributes of "intermediate products" and "final products", while the United States was the most important export destination of Vietnam's products.

Table 6: Vietnam's main five exports with the highest proportion in the world's total exports in 2019

(million US dollars)

HS	Type	Exported Value	Share in Vietnam's exports	Growth in exported value between 2015-2019	Main importer	Share in Vietnam's exports
85	Electrical machinery...	97,159	40%	20%	China	19.3%
64	Footwear, gaiters...	18,989	7.83%	11%	USA	35.2%
84	Machinery, medical...	13,092	5.48%	7%	USA	23.3%
62	Articles of apparel and...,not knitted...	15,153	5.46%	8%	USA	41.6%
61	Articles of apparel and..., knitted...	14,884	5.10%	11%	USA	56.8%
HS	Type	Exported Value	Share in world's exports	Ranking in world exports	Main importer	Share in Vietnam's exports
64	Footwear, gaiters...	18,989	12.9%	2	USA	35.2%

46	Manufactures of straw...	280	10.5%	2	USA	31.4%
9	Coffee, tea...	3,402	7%	3	USA	56.3%
62	Articles of apparel and...,not knitted..	15,153	6.5%	3	USA	41.6%
61	Articles of apparel and..., knitted...	14,884	6.3%	3	USA	56.8%

Source: Trade Map (2019)

<https://www.trademap.org/Index.aspx>

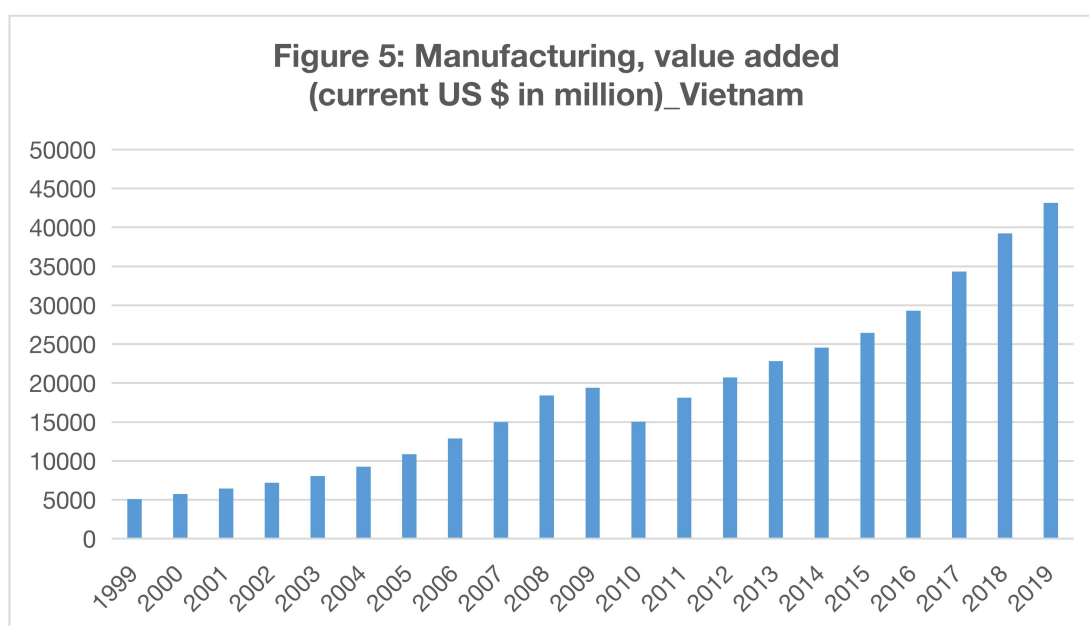
To sum up, in recent years, Vietnam's international trade structure is gradually dominated by manufactured goods, and electrical, mechanical and textile products have become an important part of the import and export of manufacturing industry. Among them, Vietnam's import of the above products is mainly "intermediate products", which is the upstream raw materials of Vietnam's manufacturing industry. The source mainly includes East Asian economies headed by China, while its export is mainly from China. It has two attributes of "intermediate product" and "final product", and mainly flows to the downstream sales market dominated by the United States.

### 3.3 Production structure

#### 3.3.1 Changes in added value of products

Behind the rapid development of Vietnam's manufactured goods trade is the rise of Vietnam's manufacturing industry. From 2010 to 2019, the added value of Vietnam's manufacturing industry increased from less than \$5 billion to about US \$45 billion in 2019 (see Figure 5), with an annual growth rate of more than 10%, while the average growth rate of the world's manufacturing industry in the same period was only about 5%, reflecting the strong growth momentum of Vietnam's manufacturing industry in the past 20 years. However, if we observe the growth rate, we can find that the added value of

Vietnam's manufacturing industry has the characteristics of "lag". For example, in the three years from 2009 to 2012, affected by the global financial crisis, 2009 was the trough of the manufacturing industry in the world, while the trough of Vietnam's manufacturing industry was postponed to 2010. At the same time, this year is also the recovery period of the world's manufacturing industry, The resurgence of Vietnam's manufacturing industry was delayed until 2011 (see Figure 5&6).



Source: The World Bank (2019)

<https://data.worldbank.org/indicator/NV.IND.MANF.CD?end=2019&locations=VN&start=1999>



Source: The World Bank (2019)

<https://data.worldbank.org/indicator/NV.IND.MANF.CD?end=2019&locations=VN&start=1999>

Although the growth rate of Vietnam's manufacturing industry is significant, the total added value of Vietnam's manufacturing industry is still in the middle and low position in the world. In 2019, within the ten ASEAN countries, the added value of Vietnam's manufacturing industry was only higher than that of Myanmar, Cambodia, Brunei and Laos, ranking sixth in ASEAN countries, while the proportion of manufacturing output in GDP was only eighth in ASEAN countries (see Table 7). At the same time, the low added value of the manufacturing industry is also directly reflected in the employment structure in Vietnam. According to the statistics of the Ministry of planning and investment of Vietnam, in 2018, the elementary occupations (agricultural, forestry and fishery laborers) are the largest employment group. According to the definition of the international labor organization, the task of the elementary occupations is: "to engage in simple and daily tasks, mainly requires the use of hand-held tools, usually some manual labor." It works in agriculture and forestry participants, mining workers, and simple task manufacturers. In Vietnam, elementary workers are mainly distributed in low value-added

labor-intensive industries such as electronic product assembly, garment sewing and footwear manufacturing. On the contrary, the lowest proportion of employment structure in Vietnam is mainly managerial and technical personnel. These non-manual labor jobs are often concentrated in technology intensive and capital intensive industries, and the value-added of these industries is low. Creation tends to be higher than in labor-intensive industries, but Vietnam has less than 30% workers in these industries (see Table 8).

**Table 7: Total value added of manufacturing industry of ten ASEAN countries in 2019**

ASEAN	Manufacturing Value added (current US \$ in million)	Manufacturing value added (% of GDP)
Indonesia	220,504	20
Thailand	137,592	25
Malaysia	78,198	21
Singapore	73,678	20
Philippines	69,569	18
Vietnam	43,172	16
Myanmar	18,859	25
Cambodia	4,409	16
Brunei	1,832	14
Laos	1,359	7

Source: The World Bank (2019)

<https://data.worldbank.org/indicator/NV.IND.MANF.ZS>

**Table 8: Employment of Vietnam in 2017  
(thousand pers.)**

Occupational Group	Labor force	Share	Occupational Group	Labor force	Share
Elementary occupations	79,729	37.15%	High-level technicians and professionals	15,462	7.21%
Service workers and sales workers	35,776	16.67%	Mid-level technicians and associate	7,007	3.27%
Craft and related	28,045	13.07%	Clerks	3,882	1.81%



workers					
Plant. machine operators and assemblers	20,613	9.61%	Leaders. managers and administrators	2,499	1.16%
Skilled agri.. forestry and fishery workers	21,035	9.80%	Not stated (including army force)	541	0.25%
Total	214,588	100.00%			

Source: Ministry of Planning&Investment of the socialist Republic of Vietnam (2017)

<http://www.mpi.gov.vn/en/Pages/tinbai.aspx?idTin=39844>

### 3.3.2 FDI in Vietnam

In addition, another major feature of Vietnam's manufacturing industry is that it is deeply affected by foreign direct investment (FDI). After the reform and opening up, FDI is one of the main driving forces for Vietnam's economic development. On the FDI source, Korea and Japan become Vietnam's major investors, and Singapore, China, Chinese mainland, Virgin Islands and other economies are also important sources of Vietnam's FDI. In terms of investment industry, Vietnam's manufacturing industry is the industry that receives the most FDI in terms of the number of projects and total investment (Table 9), and the accumulated capital accounts for 59% of the total FDI. Although affected by the COVID-19, the investment in 2020 decreased by 7.6% compared with 2019, the investment in processing and manufacturing still accounts for more than 48%. At the same time, the Asian Development Bank also pointed out in the Asian economic integration report 2019 that Vietnam's industries receiving FDI are mainly concentrated China and the United States, information technology industry (it) and textile industry, the former investment mainly from the United States, the latter mainly from South Korea, and these two industries are labor-intensive industries with large-scale human investment, and they are also the main industries of Vietnam's manufacturing industry to participate in international trade.

China's ranking is a bit surprising. But the investment in Singapore, Commonwealth islands and China Hong Kong is likely to come from a large proportion of the capital registered in Chinese mainland. The Chinese mainland's actual investment in Vietnam should be a very complicated issue.

Table 9: FDI in Vietnam in 2019 & 2020

( billion US dollars)

Accumulated FDI	Number of projects	Amount	Share	Source	Amount	Share
Total	32,915	382.9	100%	South Korea	70.5	18.4%
processing and manufacturing sector	-	225.7	59%	Japan	60.1	15.7%
real estate business	-	60.1	15.7%	Followed by Singapore, Taiwan, and Hong Kong.		
electricity production and distribution	-	28.7	7.5%			
FDI in eleven months of 2020	Number of projects	Amount	Share	Source	Amount	Share
Total	2,313	13.6	100%	Singapore	8.1	30.6%
processing and manufacturing sector	-	12.7	48.2%	South Korea	3.7	14%
electricity production and distribution	-	4.9	18.7%	China	2.4	9.1%
real estate business	-	3.8	Followed by Japan, Taiwan, Thailand, etc.			
wholesale and retail	-	1.5				

Source: Ministry of Planning & Investment of the socialist Republic of Vietnam (2020)

<http://www.mpi.gov.vn/en/Pages/tinbai.aspx?idTin=48523>

On the whole, Vietnam's manufacturing industry has the characteristics of "two high and one low" of "high-speed development", "high internationalization" and "low added value": Vietnam's manufacturing industry, which is mainly labor-intensive industry, has ushered in a golden period of

development in the past two decades, combined with the favorable opportunity of domestic reform and opening up and international industrial transfer. However, this development mainly relies on the domestic market. However, the domestic knowledge intensive and capital intensive industries have not achieved synchronous development, so the actual added value of Vietnam's manufacturing industry is relative low.

## Chapter 4 Gravity Model

The gravity model of international trade was inspired by the Newton's law of universal gravitation, which holds that a country is more inclined to trade with countries with large economic scale, high level of economic development and geographical proximity; in other words, the trade between the two countries is mainly determined by the economic scale, level of economic development and the spatial distance between the two countries. The scale of economy is usually measured by GDP, and the level of economic development is measured by per capita GDP. The basic form of the model is as follows (Tinbergen, 1962):

$$T_{ij} = A (Y_i Y_j) (y_i y_j) / D_{ij} \quad (1)$$

In this formula,  $i$  and  $j$  represent country (region)  $i$  and country (region)  $j$ ;  $i, j = 1, 2, \dots, N$  where  $N = 25$  countries and  $i \neq j$ ;  $T_{ij}$  is the total bilateral trade volume (import + export) of two countries (regions);  $A$  is a constant;  $(Y_i Y_j)$  is the product of GDP of two countries (regions);  $(y_i y_j)$  is the product of per capita GDP of two countries (regions);  $D_{ij}$  is the spatial distance between two countries (regions).

In order to facilitate the linear regression, the logarithm of the two sides of the equal (1) is linearized, and the membership of the free trade agreement is introduced into the model as a dummy variable. In addition, considering that the border trade is often more active, the common border is also put into the model as a dummy variable. The model is as follows:

$$\ln T_{ij} = \beta_0 + \beta_1 \ln(Y_i Y_j) + \beta_2 \ln(y_i y_j) + \beta_3 \ln D_{ij} + \beta_4 R_{ij} + \beta_5 B_{ij} + \mu_{ij} \quad (2)$$

$\ln T_{ij}$ ,  $\ln(Y_i Y_j)$ ,  $\ln(y_i y_j)$ ,  $\ln D_{ij}$  are logarithmic forms of  $(Y_i Y_j)$ ,  $(y_i y_j)$ ,  $D_{ij}$  respectively;  $R_{ij}$  is the membership of the free trade agreement. If both are members of the organization, R is assigned to 1, otherwise it is 0;  $B_{ij}$  dummy represents the common border. If the two countries have a common border, then this item is 1, otherwise it is 0;  $\mu_{ij}$  is a random error term. Coefficients  $\beta_1, \beta_2, \beta_3$  are elasticities for a unit change in the given exogenous variables  $Y_i Y_j, y_i y_j, D_{ij}$  respectively.

We can adjust the formula (2) as follows: In order to analyze the impact of GDP of Vietnam and its trading partners on trade volume,  $\ln(Y_i Y_j)$  is separated into  $\ln Y_i + \ln Y_j$ ; considering that the level of economic development is jointly determined by economic scale and population, the per capita GDP is directly replaced by the logs of population products  $P_i P_j$ . The final model is as follows:

$$\ln T_{ij} = \beta_0 + \beta_1 \ln Y_i + \beta_2 \ln Y_j + \beta_3 \ln(P_i P_j) + \beta_4 \ln D_{ij} + \beta_5 R_{ij} + \beta_6 B_{ij} + \mu_{ij} \quad (3)$$

In terms of sample selection, 2007 is the year of Vietnam's accession to the WTO, so start from 2007 to 2019, the latest available data, top 26 major trading partners of Vietnam were selected. Vietnam's export data to these

countries (or regions) comes from the IMF.

Using the data collected regression analysis of formula (3) is carried out in a fixed-effect model with the help of Greta statistics, including 25 country dummies (i.e. N-1), which improve the fit of the model since the data are formed in a panel. The details are as follows:

Model 1: Dependent variable: LnTrade (M+X)

Fixed-effects, using 338 observations (13 years x 26 countries).

Data can be estimated either (A) as 13 independent cross-sectional units of time (year), each containing data for 26 countries in given year. Or (B) as 26 independent time-series units of countries, each containing data for 13 years. I decided to test a hypothesis how the explanatory variables influence the trade in time, so the dummy variables dt are by N-1 countries, i.e. the estimation seeks for the common factors determining the evolution of trade in time.

#### Model 1 Estimation Results

	Coefficient	Std. Error	t-stats	p-value	
const	-21.4389	3.72019	-5.763	<0.0001	***
Ln Dij	-1.41725	0.0792538	-17.88	<0.0001	***
FTA	0.571701	0.101463	5.635	<0.0001	***
Common Border	-0.275988	0.141266	-1.954	0.0517	*
Ln Yi	0.984820	0.145103	6.787	<0.0001	***
Ln Yj	1.39684	0.0493106	28.33	<0.0001	***
Ln PiPj	-0.610698	0.0399867	-15.27	<0.0001	***
dt_2 (Belgium)	-0.232971	0.157576	-1.478	0.1404	
dt_3 (Brazil)	-0.373326	0.154799	-2.412	0.0165	**
dt_4 (Cambodia)	-0.541358	0.152489	-3.550	0.0004	***
dt_5 (Canada)	-0.613600	0.150318	-4.082	<0.0001	***
dt_6 (China,Mainland)	-0.680405	0.150969	-4.507	<0.0001	***
dt_7 (Hong Kong)	-0.651895	0.152890	-4.264	<0.0001	***
dt_8 (France)	-0.589578	0.155567	-3.790	0.0002	***
dt_9 (Germany)	-0.457128	0.156895	-2.914	0.0038	***
dt_10 (India)	-0.498959	0.159653	-3.125	0.0020	***
dt_11 (Indonesia)	-0.492780	0.164376	-2.998	0.0030	***
dt_12 (Italy)	-0.551405	0.170226	-3.239	0.0013	***

dt_13 (Japan)	-0.677426	0.175469	-3.861	0.0001	***
dt_14 (Korea)	0.00443141	0.174880	0.02534	0.9798	
dt_15 (Laos)	-0.144598	0.159462	-0.9068	0.3653	
dt_16 (Malaysia)	-0.115929	0.156386	-0.7413	0.4591	
dt_17 (Myanmar)	-0.138464	0.153192	-0.9039	0.3668	
dt_18 (Netherlands)	-0.168562	0.150062	-1.123	0.2622	
dt_19 (Philippines)	-0.0211742	0.149992	-0.1412	0.8878	
dt_20 (Russia)	-0.0868665	0.151508	-0.5733	0.5668	
dt_21 (Singapore)	-0.116837	0.153851	-0.7594	0.4482	
dt_22 (Spain)	0.0767543	0.155197	0.4946	0.6213	
dt_23 (Thailand)	0.0615931	0.157701	0.3906	0.6964	
dt_24 (United Arab Emirates)	0.128042	0.161963	0.7906	0.4298	
dt_25 (United Kingdom)	0.0288021	0.167405	0.1721	0.8635	

Note: The tests used for data analysis above only about which I know how they function.

The partial elasticity of dependent variable to explanatory variable is the coefficient of each variable, whose value was in logarithms or in percentages. Now we can predict the impact of changes in their respective variables on Vietnam's exports. The regression result of  $\beta_7$  is 0.984, it can be considered that if other factors remain unchanged, if the Vietnam's GDP increases by 1%, the trade between Vietnam and its partner will increase by 0.984% (i.e. practically close to unity);  $\beta_2$  is 1.396, it can be considered that if the partner's GDP increases by 1%, the trade between Vietnam and its partner will increase even more, i.e. by 1.396%. So we have discovered the two principal drivers of success in the trade of Vietnam: the exceptionally high response of trade to the both GDPs; the regression coefficient of population is -0.610, which means that when other conditions remain unchanged, if the population of the importing country changes by 1%, the foreign trade of Vietnam will change by 0.610% in the opposite direction; similarly, if other conditions remain unchanged, the regression system of distance is -1.417,

which means that the larger is the distance between trading partners the mutual trade is impeded by these transaction costs.

The estimated value of each parameter is significantly non-zero, and the corrected value of  $R^2$  is 0.833, which indicates that the goodness of fit is acceptable. The fitting equation can be written as follows:

$$T_{ij} = e^{-21.438+0.571R_{ij}-0.275B_{ij}} Y_i^{0.984} Y_j^{1.396} P_{ij}^{-0.610} D_{ij}^{-1.417}$$

Except for the counter-intuitive negative correlation of border trade, the remaining non-dummy regression coefficients are consistent with the theoretical expectations, including the impact of population and distance on Vietnam's exports, which are both negative.

1. The regression coefficient of Vietnam's GDP is 0.984 and partner's GDP is 1.396, i.e. the former coefficient is close to elasticity of unity. This indicates that with the development of Vietnam's economy, Vietnam's foreign trade is growing and expanding at practically equal rate. However, the coefficient for partner economies  $Y_j$  has the elasticity significantly greater than unity, which is exceptional since the usual values of this parameter for other countries are around unity. Vietnam's own economic development is thus driven by two powerful engines on the side of exports: by its own internal growth of GDP generating similar export capacities, and by the GDP growth in the partner countries multiplied by a factor of 1.396. The regression coefficient of population factor is -0.610, which indicates that excessive population growth in time often reduces the per capita income level, thus reducing the current import demand of importing countries. So when we emphasize effective market demand we should not only consider the number of people, but also the purchasing power. Although the total economic volume of some countries is relatively large, the per capita income is very low, so the import demand for consumer goods is relatively low.

2. The regression coefficient of distance is  $-1.417$ , which indicates that distance is the main resistance factor of Vietnam's export. This means that Vietnam is more inclined to export to countries and regions closer to each other. In fact, it is the same: four of Vietnam's top five trading partners are in East Asia. Of course, this is closely related to ASEAN's efforts to promote intra-regional trade.

3. The regression coefficient of free trade agreement is  $0.571$ . It seems that Vietnam's accession to the free trade agreement does have a positive impact on Vietnam's exports to its partners in the region. According to the data of the Department of International Cooperation of the Ministry of Finance of Vietnam, as of 2019, the 12 free trade agreements that have come into force and are being implemented include ASEAN, ASEAN China, ASEAN South Korea, ASEAN Australia New Zealand, ASEAN India, ASEAN Japan, Vietnam Japan, Vietnam Chile, Vietnam South Korea, Vietnam Laos, Vietnam-Asia Europe Economic Union and The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTTP). The most important measure in FTA is to reduce the internal trade tariff, which facilitates the intra-regional trade and reduces the transaction cost of intra-regional trade, making Vietnam more competitive than its non-agreement trade partners when exporting to its trade agreement partners.

4. The coefficient of common border is  $-0.275$ , which is an interesting discovery. The reason is that the economies of Laos and Cambodia are small and the development level is low. However, there is one dominant neighbor of Vietnam and that is China. We can presume that the negativity of this coefficient was greatly influenced by China. That implies that the potential to trade between China and Vietnam has still great reserves to activate. In normal circumstances the common border coefficient is nearly always positive. This is one of my most important findings. P-value of country dummies is  $2.55874e-10$ , which is much less than  $0.01$ . Then we can reject



the null hypothesis and accept that country dummies had significant effects on Vietnam's foreign trade, which was especially visible on the negative effects for dt 2-13. These countries were underperforming, including China, Hong Kong, France and Germany - four strategic partners.

## Chapter 5 Vietnam's strengths and weaknesses compared with China

### 5.1 Political and Economic Policy

Vietnam is one of the countries with the largest number of multilateral and bilateral free trade agreements (FTA) in the world. Up to now, Vietnam has participated in 20 free trade agreements or international cooperation agreements, according to the data of the Vietnam's Ministry of finance. Specifically, the 12 free trade agreements that have come into force and are being implemented include ASEAN, ASEAN China, ASEAN South Korea, ASEAN Australia New Zealand, ASEAN India, ASEAN Japan, Vietnam Japan, Vietnam Chile, Vietnam South Korea, Vietnam Laos, Vietnam Asia Europe Economic Union and the comprehensive and progressive trans Pacific Partnership Agreement. The two agreements that have been signed but have not come into force include the Vietnam EU free trade agreement and the Vietnam Cuba free trade agreement; the three agreements under negotiation include Vietnam Israel, Vietnam European Free Trade Area and Vietnam Britain. These free trade agreements are aimed at reducing many tariff items and opening up investment and trade markets, so as to provide Vietnamese enterprises with great opportunities to enter the world market and expand the export market.

As for domestic policies, for example, Vietnam Singapore Industrial Park (VSIP) was established by Singapore in cooperation with the Vietnamese

government. In 1996, Singapore established its first VSIP near Ho Chi Minh City, and by 2019, Singapore had already built eight VSIP in Vietnam. What attracts Singapore to build an industrial park in Vietnam? What can attract so many enterprises to settle in? The most important reason is a series of investment promotion policies made by Vietnam for industrial parks.

First, enterprises in industrial parks can enjoy very preferential tax policies, commonly known as "two exemptions and four halvings". Vietnam has a corporate income tax rate of 20 percent, while those with factories in the industrial areas approved by the central government are exempt from the first two years of income tax, and only half of the tax will be paid in the next four years. Import duties on raw materials imported for the production of export products, VAT on export goods and return tax on profits shall be exempted at all stages. In order to balance regional development, Vietnam has also set up special economic zones, where the policy is more favorable, the first four years of enterprise income tax is free, and the next nine years will be halved. If an enterprise invests in projects with a long time span in economically backward areas, the land use period can exceed the usual 50-year lease period and extend to 70 years; if approved by the competent authorities, it can even sign for a longer time. Secondly, the investment preferential policies given by various industrial parks in Vietnam are basically the same, and are formulated by the central government of Vietnam.

## 5.2 Labor and Land Cost

This series of data and policies are very intuitive to show Vietnam's determination to develop its economy. But if a large number of manufacturing companies rush into Vietnam, they will push up the prices of Vietnamese land and labor, and its advantages in this regard will be weakened in those industries and regions where the productivity will not catch up. According to the data released by CBRE in 2019, the average monthly rent of Ho Chi Minh,

the largest city in southern Vietnam, is \$4.1 per square meter and the highest monthly rent is \$8 per square meter; the average monthly rent in the northern economic circle of Vietnam is \$3.5-\$4 per square meter and the highest monthly rent is \$5.5-\$6 per square meter. The monthly rent of the factory buildings built in Suzhou of China is about \$4.2 per square meter, Dongguan is about \$3.6 per square meter, and Chengdu is about \$2.5 per square meter. Vietnam has no advantage in this regard compared to many areas of China.

But Vietnam has a clear advantage in labor prices. In 2018, the per capita monthly income of Chinese workers was \$807. In Vietnam, the average monthly wage of labor force was not up to \$288 until the first half of 2019, compared with the average monthly salary of ordinary workers was only \$206. But Vietnam has a policy that Congress legislates every year to raise the minimum wage. The increase in the previous years is 12% to 13% a year, which has caused considerable pressure on enterprises. Therefore, the increase has fallen in recent years, with the increase rate of 5.3% in 2019. However, due to the increasing number of enterprises that have been transferred in recent years, the labor supply is short of demand, and the skilled workers and managers are more popular. The salary paid by enterprises is usually much higher than the minimum wage, and the corresponding increase will be made every year. Vietnam government is also more vigilant about this, worried that the influx of enterprises will make the factor price rise too fast, and make Vietnam lose competitiveness rapidly. Once these companies move quickly, Vietnam's economy will have big problems. So the government began to control, and the approval of investment was a little more cautious than it used to be. Generally speaking, Vietnam has advantages over China in labor and tax policies, while others are basically in a disadvantage. So, only from the comparative advantage perspective, only the labor cost and tax cost (including the tariff cost to the United States) are relatively high, and the dependence on the supply chain is

not so large, will it tend to move to Vietnam.

## 5.3 Territory and Population

Vietnam has a land area of 330000 square kilometers, about 1 / 30<sup>th</sup> of China. However, there is still a long way to go for infrastructure construction in Vietnamese territory. Vietnam had a population of about 96.46 million in 2019, which is mainly distributed in the two major Delta areas of the north and south. However, the two major ports in Vietnam (the coastal defense port in the northern Red River Delta and Ho Chi Minh port in the southern Mekong Delta) have little connection with each other, and the relationship between the two ports is even far less than that of other regions of the world. Although the north and South can also be connected by road and railway, but it is restricted by the lower level of infrastructure construction, but the northern Vietnam area is closely related to China in land transportation. This means that the economic integration within Vietnam is not in place. In a sense, Vietnam can be divided into two semi- independent economic circles, with more than 30 million people each, while the rest live in the mountainous or central areas with backward economy. However, the two semi-independent economic circles have not made a substantial impact on the economic development of Vietnam at present, because Vietnam is still an economy with high dependence on foreign trade, mainly simple processing. By contrast, Vietnam's population size, territory size, economic scale, high-quality infrastructure scale, the scale of excellent engineers, and the scale of qualified college students and skilled workers cultivated each year are one or two orders of magnitude less than that of China. Given such a huge gap in power, Vietnam is indeed unlikely to weaken the status of China's world factory more than at a margin in more R&D demanding production. But Vietnam can absorb the low-tech production that will be on decline in China.

# Chapter 6 Historical and cultural factors

Apart from the political and economic reasons, the historical and cultural factors also influence the transfer trend.

Compared with Vietnam, Thailand's and Malaysian manufacturing industries are the strongest in Southeast Asia. Their economies are too mature and their growth can be expected to be close to average. However, Vietnam's economic maturity is lower than that of Thailand or Malaysia, which means that its growth can be driven faster by the phenomenon of imitation, once Vietnam has sufficient financial and human capital for development. Culturally, Vietnam is in the big Confucian cultural circle, so the Vietnamese have a relatively strong sense of "rushi" (secularism) and a relatively strong desire for development. In addition, the population of nearly 100 million cannot be underestimated. In addition, Vietnam's political system is close to China's, and its government efficiency is relatively high. Although high government efficiency is a "double-edged sword", it is a bonus for the development of manufacturing industry.

Vietnam, with a long and narrow territory from north to south, was initially formed at the end of the 17th century. Previously, it was divided into three parts from north to south, roughly corresponding to the later known "north" (the Red River Delta area), "middle" (the Truong Son Ra area) and "south" (the Mekong Delta area). The history of these three areas is different, and the cultural tradition is also quite different. From the Western Han Dynasty to the end of Tang Dynasty, the north had been ruled by Chinese dynasties for more than a thousand years, which basically belonged to the Confucian cultural

circle. Moreover, before being colonized by France, the north belonged to the circle of Chinese characters.

In a series of complicated historical evolution in the past 2000 years, Vietnam has been more and more influenced by Confucian culture from north to south. The cultural influence and social structure shape each other, and the organizational maturity of Vietnamese society decreases from north to south. And the north is in a dominant position in politics.

After that, the historical narrative is that the Vietnamese monarch led the people to resist the threat of the strong neighbors in the north and protect their hard won independence. Vietnam continues to identify itself with China as the other, expressing a strong sense of subjectivity. In reality, with China as the powerful other, Vietnam's pursuit of subjectivity can only be expressed as the pursuit of "independence". The expression of "independence" in modern Vietnam is largely a reinterpretation of its ancient expression. In terms of geographical environment, the north of Vietnam is close to the powerful China, so it has an inherent sense of anxiety, which is the first premise for Vietnamese to make any decision. This kind of anxiety cannot be resolved by efforts of development.

To sum up, first, Vietnam has created a nation with strong sense of self-respect and independence through historical narration. Second, the reality of the international situation makes Vietnam's various political pursuits essentially a nationalist pursuit, and any ideology is the coat to help it realize its nationalist pursuit. Therefore, Vietnam has greater flexibility and freedom in reform and concept. Third, the strong sense of Independence made Vietnam fall into a long-term war after World War II, but this process also forged a powerful army second to none in Southeast Asia, thus bringing the strongest national capacity among Southeast Asian countries. Fourth, Vietnam's strong national capacity, coupled with its huge population, young population

structure, excellent population quality, and the strong orientation of Confucian civilization towards realism, have made Vietnam more able to seize the opportunity than other Southeast Asian countries when the opportunity comes.

## Chapter7 China's supply chain network

China's economic miracle is far from being explained merely by the low factor prices of labor and land (Li et al., 2020). There is a huge system that has evolved gradually behind it. Because China has the ability to control the comprehensive production cost of products at a very low level, this kind of cost control ability relies on a huge supply chain system, rather than a cheap production factor. After entering the 21st century, this huge system has been self-organizing and self-evolving with great energy. In the case that China's labor and land costs are no longer superior to many developing countries, these low-tech industries still maintain a strong cost control ability. This kind of strong competitiveness can better reflect the strength of the system itself.

On the one hand, the development of China's supply chain is closely related to the world market and the great transformation of the global economic order. And the primary driving force of this transformation is the transformation of innovation economy led by western countries, especially the United States. In 1980, the U.S. passed the "Bayh-Dole Act", which made a series of new provisions on the intellectual property rights of scientific and technological inventions (Link and van Hasselt, 2019). The direct consequence is that it stimulated the innovation of small companies at the technical level. Small companies then sell technology to other companies to develop products. Big companies can do all kinds of product innovation, but because there is no monopoly technology, there is no way to prevent others from imitating themselves. Therefore, big companies can only change their pursuit from

technical barriers to speed barriers to ensure their dominant position. In order to ensure the efficiency of innovation, this type of large companies must outsource their production processes. Because as long as you hold the production process in your own hands, once you have a new idea, you have to adjust the whole production line. The transformation cost is very high, which will seriously drag down the innovation efficiency. Therefore, large-scale outsourcing constitutes the internal demand of this round of innovation economy in the West. At this time, China has become a very important variable. The emergence of large-scale outsourcing demand just matches with the rhythm of a series of economic evolution in China. China has formed a strong ability to undertake outsourcing and achieved ultra-high economic growth. China's rapid economic growth, to a certain extent, is driven by the innovation economy of the West.

The mystery of China's strong ability to undertake outsourcing lies in the huge supply chain network mentioned above. The contractor of outsourcing must meet the requirements of efficiency and flexibility at the same time. If there is no efficiency in the production process, you can't get orders, and if you want to be efficient, you have to be specialized; if you are too specialized, you will be locked in specific needs, so the whole production process must be flexible, and can quickly adjust to adapt to changes, but if there is flexibility, it is difficult to be specialized. The two requirements of efficiency and flexibility are contradictory and cannot be realized at the same time within the same enterprise. In China, the two requirements of efficiency and flexibility are put on different levels through the supply chain network. The single small and medium-sized enterprises in the supply chain network are extremely specialized, only producing the parts which are disassembled as the most basic elements (Zhou and Li, 2020). Because it has been disassembled to a very basic level, these products have good compatibility, and can form a variety of matching combinations with other parts produced by many other



factories. For example, this is equivalent to that each small and medium-sized enterprise only produces a specific shape of Lego building blocks, and countless small and medium-sized enterprises have countless shapes of Lego building blocks. These enterprises form a huge network, and the products they produce can be combined together in various ways to create all kinds of things. In this way, the highly specialized single small and medium-sized enterprises ensure the efficiency, and the supporting relationship of the continuous dynamic restructuring of small and medium-sized enterprises makes the whole network flexible.

Moreover, China's huge supply chain is driven not only by the world market, but also by China's huge internal consumer market (Taylor, 2014). In recent years, the pulling effect of domestic consumer market is more and more obvious. According to the data of the National Bureau of statistics, in 2018, the total retail sales of China's social consumer goods increased by 9.0% year-on-year to 38.1 trillion yuan, while the total retail sales of the United States of America's social consumer goods in the same period was 6.04 trillion US dollars, a year-on-year increase of 5%. According to the exchange rate of that year, the scale of China's consumer market is equivalent to 95.36% of that of the United States. By 2019, China has surpassed the United States as the largest single country consumer market in the world. These data mean that China's supply chain network will not shrink due to the outward shift of some production capacity, because the growth of domestic demand can be filled. Even if Vietnam develops its own supply chain network in the future development process, its own volume is too small, and the scale of supply chain it can support can not be compared with China at all; although it faces the global market, because of its too small volume, the scale of supply chain it can support still has a huge gap with China. Then, the depth of division of labor and the flexibility of cooperation within Vietnam's supply chain, that is, the operational efficiency of the supply chain, is far less than

that of China. This also means that if the manufacturing enterprises transferred to Vietnam have a high demand for the supply chain, it will be more efficient to purchase from China's supply chain, especially from China for all kinds of standard parts upstream of the production process, than from Vietnam. In this way, the manufacturing capacity transferred to Vietnam is not transferred from China, but forms a chimeric relationship with China's supply chain.

The larger the scale, the more small and medium-sized enterprises in the network, the deeper the division of labor, and the higher the efficiency; at the same time, the more possible the dynamic combination of each node in the network, the greater the flexibility. Once the scale of the network exceeds a critical point, there will be a great change in the ability of cost control, starting to absorb the manufacturing industry with demand for the supply chain from the whole world.

In the absence of substantial technological change, this transfer is almost final. Except for products with low supply chain demand and sensitive to long-distance logistics cost, such as glass, cement, etc. Such products are suitable for production close to the market, so they can be transferred from China. However, this does not rule out the possibility of low-end manufacturing spillover from China to neighboring Southeast Asian countries. Southeast Asian countries can't compare with China in the scale advantage of supply chain network, so they may undertake part of the production links spilled from China's supply chain, but they can't replace the status of China's manufacturing center. This means that the spillover of manufacturing industry from China to Southeast Asia is the further expansion of the scale of the supply chain network with China as the center - there are various complementary relations between the production processes of Southeast Asian countries and China, which constitute a larger supply chain network (Hatani, 2009).

## Chapter 8 Conclusion

Vietnam's economy is highly dependent on foreign trade. The rapid development of Vietnam's import and export trade has also greatly promoted the growth of Vietnam's GDP. At the same time, Vietnam's foreign trade structure has also undergone tremendous structural changes, which have mainly occurred in the transition of foreign trade products from primary products to manufactured products.

According to our gravity model's tests, Vietnam's trade volume is directly proportional to Vietnam's GDP. It is inversely proportional to the population size of trading partners because the increasing population size of trading partners will reduce per capita GDP to a certain extent, which will have a negative effect on bilateral trade. Also more populous countries (such as China) are prone to more intensive internal trade. In addition, spatial distance is negatively correlated with Vietnam's foreign trade, and Vietnam is more inclined to trade with countries in close neighborhood. However, with the development of transportation technology, the common border is negatively correlated with Vietnam's trade. Apart from China, Vietnam's neighboring countries have small economies, so there are less trade activities with Vietnam. What's more, the free trade agreements have played a positive role in promoting Vietnam's foreign trade.

Vietnam's manufacturing industry has the characteristics of "two high and one low" of "high-speed development", "high internationalization" and "low added value". Vietnam imports intermediate products from the East Asian economies headed by China, processes them (often as a mere assembly that is labor intensive) and exports them to the world market headed by the United States and the EU. Although the added value of Vietnamese manufacturing in the whole manufacturing process increases year by year, it is still at a low

level, reflecting the low local wages and low technical sophistication of assembly.

With Vietnam's reform and opening up, Vietnam has accelerated infrastructure construction, accelerated the pace of state-owned enterprise reform, and successively signed free trade agreements with more than 20 countries and regional organizations to attract foreign investment with more preferential tax policies and more open market environment. In addition, compared with China, Vietnam's lower labor costs also add to the export competitiveness.

However, Vietnam's manufacturing industry also has structural difficulties. More than 80% of the exports are done by foreign investment enterprises, and the local enterprises in Vietnam only dominate the export of sea products and wood products. The upstream intermediate products of Vietnam's manufacturing products rely on imports, while the vast majority of final products rely on exports. In addition, compared with China, Vietnam has obvious disadvantages in land cost, transportation and consumer market. Although the labor price in Vietnam is relatively low, the overall human capital quality of the labor force is not high, and most of them can only engage in basic processing work with low skill level. Moreover, the price of industrial land in Vietnam has no advantage compared with many cities in China, and with the influx of manufacturing industry in a short time, the price of labor and land will rise, and this advantage will be further reduced. In contrast, in China, countless spontaneous small and medium-sized enterprises constitute a huge and detailed network of China's manufacturing supply chain. These small and medium-sized enterprises can form free combination according to the external demand, which is to keep the efficiency and flexibility of the supply chain and control the production cost to the utmost. China's huge domestic demand market is also a fertile soil for the supply chain to take root. Therefore, manufacturing in Vietnam will not replace manufacturing in China, but will

tend to be embedded in the China's supply chain network in a new form of intra-industrial specialization.

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